

AFTER an interval of about two years, Sir George King, late superintendent of the Royal Botanic Garden, Calcutta, continues, in the *Journal* of the Asiatic Society, Bengal, his materials for a flora of the Malayan Peninsula. The present part consists of a monograph of the Malayan species of Melastomaceæ, prepared with the assistance of Dr. O. Stapf, of the Kew Herbarium.

IN an article on the fertilisation of *Peronospora parasitica* in the *Annals of Botany* for June, Mr. Harold Wager points out that there are at present known three distinct types of fertilisation in the Peronosporæ. In the first, represented by *Peronospora parasitica*, the oosphere and oospore are uninucleate, and fusion takes place between two nuclei only. In the second type the oosphere is uninucleate and the oospore multinucleate, and fusion is effected between two nuclei only. In the third type the oosphere and oospore are both multinucleate, and fusion takes place between a number of nuclei in pairs.

IN a paper recently read before the Linnean Society, on the origin of the Basidiomycetes, Mr. G. Masee points out the connection between the Hyphomycetes and the Protobasidiomycetes. The conidial forms of many Hyphomycetes are true Protobasidiomycetes. There is no evidence that the Autobasidiomycetes are in any way descended from the Protobasidiomycetes; while, on the other hand, there are indications that the Autobasidiomycetes may probably have been derived by gradual modifications of the spore-bearing organs or ooids of conidial forms of certain ascigerous fungi.

PROF. J. J. THOMSON'S inspiring work on "The Discharge of Electricity through Gases" (Constable and Co.) has been translated into French by Dr. L. Barbillion, and published by MM. Gauthier-Villars under the title "Les Décharges électriques dans les Gaz." Dr. Barbillion adds a few notes, and Dr. C. E. Guillaume contributes a preface. The original volume was reviewed in NATURE of January 12, 1899 (vol. lix. p. 241), and the translation will doubtless be received by French physicists with the same appreciation as the work has commanded in Great Britain.

SEVERAL articles of real interest to students of science and philosophy have appeared in recent numbers of *The Open Court*. The August number contained an account of Galileo in which his work is presented in new aspects, and the opposition to his conclusions as to the movements of the earth and the character of the visible universe is in some part explained. The current number contains an instructive contribution on Greek religion and mythology, by the editor, Dr. Paul Carus, and one on animism in popular thought and in science, by Prof. E. Mach. Many of the articles in the magazine are excellently illustrated.

AN atlas for druggists and students of pharmacy, by Prof. Ludwig Koch, is in course of publication by the firm of Gebrüder Borntraeger, Leipzig, under the title of "Die mikroskopische Analyse der Drogenpulver." The first volume is to be devoted to barks and woods, and the second part of it, containing six plates, has just appeared.

THE third and fourth parts of Dr. Chun's elaborate account of the German *Valdivia* expedition have just been published by the firm of Gustav Fischer, Jena. The parts are illustrated with numerous half-tone figures and some very fine plates, and the work promises to be a very attractive narrative of an extensive voyage.

THE additions to the Zoological Society's Gardens during the past week include a Sooty Mangabey (*Cercocebus fuliginosus*) from West Africa, presented by Mr. B. Stewart; a Squacco Heron (*Ardea ralloides*), South European, presented by Mr. A. F. Putz; a Black-headed Terrapin (*Damonia reevesi unicolor*) from China, an Algerian Skink (*Eumeces algeriensis*) from North-west Africa, a Common Chameleon (*Chamaeleon vul-*

*garis*) from North Africa, presented by Mr. F. J. Bridgman; an European Pond Tortoise (*Emys orbicularis*), European, presented by Miss F. M. Weippert; a Wall Lizard (*Lacerta muralis*), a Tessellated Snake (*Tropidonotus tessellatus*), European, presented by Mr. Walter Hunter; two Badgers (*Meles taxus*), British; two Indian Fruit Bats (*Pteropus medius*) from India, three Black-spotted Teguxins (*Tupinambis nigropunctatus*) from South America, two Antillean Boas (*Boa divinioloua*) from the West Indies, five Undulated Lizards (*Sceloporus undulatus*) from South-east United States, deposited.

OUR ASTRONOMICAL COLUMN

EPEHEMERIS FOR OBSERVATIONS OF EROS:—

1900.	R.A.			Decl.
	h.	m.	s.	
Sept. 20	...	2 39	43	... +40° 47' 1"
21	...	40	20	... 41 9' 9"
22	...	40	55	... 41 32' 8"
23	...	41	27	... 41 55' 7"
24	...	41	56	... 42 18' 6"
25	...	42	23	... 42 41' 4"
26	...	42	46	... 43 4' 2"
27	...	43	7	... 43 27' 0"
28	...	43	25	... 43 49' 7"
29	...	43	40	... 44 12' 3"
30	...	2 43	51	... +44 34' 8"

SWIFT'S COMET (1892 I.).—In the *Annals of Harvard College Observatory* (vol. xxxiii. Part ii. pp. 267-295), Prof. W. Pickering describes the photographs obtained of this comet at Arequipa during March and April 1892, illustrating his remarks by reproductions from nine of the negatives.

The plates were taken with four instruments—the 13-inch Boyden telescope, 8-inch and 2.5-inch doublets, and a 20-inch reflector; two photographs were also obtained with the 8-inch refractor provided with an objective prism of 13° refracting angle. The exposures varied from 5 to 133 minutes.

While the comet was easily visible to the naked eye, it was carefully examined with a double image prism, but no traces of polarisation could be detected in either the head or tail. The nucleus was yellowish-green in colour, giving out a triangular jet towards the sun.

The head was distinctly divisible into three parts—nucleus, bright primary envelope and an outer fainter one. The tail was composed of two sets of rays having distinctly different origins. The brighter of these sets, forming what may be called the "inner" tail, took its origin from the rear side of the inner envelope, and in some of the photographs this attains the great length of over 20° of arc. The rays were absolutely straight so far as could be determined from the photographs, and were inclined to each other about 10°. The outer tail sprang from the external faint envelope, and, in contrast to the other, was marked by conspicuous deep and wide rifts between the rays composing it.

Prof. Pickering thinks that certain periodic differences in appearance are caused by a rotation of the comet about an axis passing longitudinally through the tail. Comparisons of the Arequipa photographs with others obtained by Dr. Wolf and Prof. Barnard show that it is quite possible to detect changes from one hour to another, and from a detailed examination of the angular deviation of the rays it is probable that the rotation period is about 94-97 hours.

The photograph taken April 14 shows a strong deflection of the inner tail, but the absence of other photographs near that date render it impossible to trace the cause, and the phenomenon was not subsequently repeated.

In general, it was impossible to identify any particular feature on two successive days, but on April 6, 7, 8, a bright condensation was noticed each day, and its distance from the nucleus of the comet was found to increase day by day. These displacements were carefully measured, converted into kilometres by reference to the comet's elements, and an estimate made of the amount of the repulsive force exerted upon the comet's tail by the sun. This indicated the total repulsive force to be about 39.5 times the gravitational force. The spectrum photographs have been difficult to reduce, but the brightest region of the spectrum appears as an intense and very narrow line about λ 3890. No indications of the hydrogen lines were seen.